

IASI L0 and L1 Daily Monitoring Report

IASI monitoring team

07/01/2016 00:00:00 - 08/01/2016 00:00:00

1 Introduction

This report provides summary monitoring plots and figures from IASI instrument on the MetOp-A satellite retrieved from the IASI L0 and L1 ENG product (3 minute data packet) for 07/01/2016 00:00:00 - 08/01/2016 00:00:00 .

The monitoring data are extracted on PDU basis.

Data extraction, calibration, processing and statistics are performed at EUMETSAT.

2 Data quantity 07/01/2016 00:00:00 - 08/01/2016 00:00:00

Product Type	Number	Action
L0 HKTM PDUs	481	-
L0 IASI PDUs	481	-
L1 ENG PDUs	480	-
L1 ENG distinct GEPSGranule	481	-
L1 DPX PDUs (RM: IASI-HIRS)	480	-
L1 DPS Files (RM: OBS-CAL NWP based)	480	-

Table 1: Data quantity

APID	Seq from	Seq to	Time from	Time to
PX1 (130)	5105	5107	20160107055103.970	20160107055105.915
PX1 (130)	5108	5113	20160107055106.130	20160107055107.212
PX1 (130)	5113	5115	20160107055107.212	20160107055107.646
PX1 (130)	5116	5118	20160107055107.861	20160107055108.294
PX1 (130)	5119	5123	20160107055108.513	20160107055109.376
PX1 (130)	5123	5125	20160107055109.376	20160107055109.810
PX1 (130)	5125	5131	20160107055109.810	20160107055111.107
PX1 (130)	5131	5133	20160107055111.107	20160107055111.536
PX1 (130)	5136	5138	20160107055113.701	20160107055114.134
PX1 (130)	5139	5141	20160107055114.349	20160107055114.779
PX1 (130)	5141	5145	20160107055114.779	20160107055115.646
PX1 (130)	5146	5148	20160107055115.861	20160107055116.294
PX1 (130)	5148	5150	20160107055116.294	20160107055116.728
PX1 (130)	5154	5159	20160107055117.591	20160107055118.673
PX1 (130)	5160	5162	20160107055118.888	20160107055119.322
PX1 (130)	5162	5168	20160107055119.322	20160107055122.130
PX1 (130)	5168	5172	20160107055122.130	20160107055122.997
PX1 (130)	5173	5185	20160107055123.212	20160107055125.806

Continued on next page

Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX1 (130)	5185	5187	20160107055125.806	20160107055126.240
PX1 (130)	5188	5190	20160107055126.454	20160107055126.888
PX1 (130)	5190	5205	20160107055126.888	20160107055131.646
PX1 (130)	5205	5211	20160107055131.646	20160107055132.943
PX1 (130)	5212	5214	20160107055133.158	20160107055133.591
PX1 (130)	5214	5224	20160107055133.591	20160107055135.755
PX1 (130)	5224	5227	20160107055135.755	20160107055137.915
PX1 (130)	3217	3226	20160107114646.209	20160107114649.670
PX1 (130)	3238	3240	20160107114652.264	20160107114652.698
PX1 (130)	3240	3243	20160107114652.698	20160107114653.346
PX1 (130)	3244	3246	20160107114653.561	20160107114653.994
PX1 (130)	3247	3249	20160107114654.209	20160107114654.643
PX1 (130)	3250	3254	20160107114654.858	20160107114655.725
PX1 (130)	3256	3260	20160107114657.670	20160107114658.533
PX1 (130)	3260	3263	20160107114658.533	20160107114659.182
PX1 (130)	3267	3271	20160107114700.049	20160107114700.912
PX1 (130)	3273	3275	20160107114701.346	20160107114701.776
PX1 (130)	3275	3278	20160107114701.776	20160107114702.428
PX1 (130)	3278	3280	20160107114702.428	20160107114702.858
PX1 (130)	3281	3284	20160107114703.076	20160107114703.725
PX1 (130)	3285	3287	20160107114703.940	20160107114705.885
PX1 (130)	3288	3291	20160107114706.100	20160107114706.752
PX1 (130)	3291	3293	20160107114706.752	20160107114707.182
PX1 (130)	3293	3296	20160107114707.182	20160107114707.830
PX1 (130)	3296	3302	20160107114707.830	20160107114709.127
PX1 (130)	3302	3305	20160107114709.127	20160107114709.780
PX1 (130)	3306	3309	20160107114709.994	20160107114710.643
PX1 (130)	3311	3315	20160107114711.076	20160107114711.940
PX1 (130)	3316	3318	20160107114713.670	20160107114714.104
PX1 (130)	3321	3323	20160107114714.748	20160107114715.182
PX1 (130)	3323	3325	20160107114715.182	20160107114715.615
PX1 (130)	3325	3327	20160107114715.615	20160107114716.049
PX1 (130)	3327	3329	20160107114716.049	20160107114716.483
PX2 (135)	5105	5107	20160107055103.970	20160107055105.915
PX2 (135)	5108	5113	20160107055106.130	20160107055107.212
PX2 (135)	5113	5115	20160107055107.212	20160107055107.646
PX2 (135)	5116	5119	20160107055107.861	20160107055108.513
PX2 (135)	5119	5123	20160107055108.513	20160107055109.376
PX2 (135)	5126	5129	20160107055110.025	20160107055110.673
PX2 (135)	5129	5133	20160107055110.673	20160107055111.536
PX2 (135)	5133	5135	20160107055111.536	20160107055111.970
PX2 (135)	5136	5139	20160107055113.701	20160107055114.349
PX2 (135)	5139	5141	20160107055114.349	20160107055114.779
PX2 (135)	5141	5148	20160107055114.779	20160107055116.294
PX2 (135)	5148	5150	20160107055116.294	20160107055116.728
PX2 (135)	5153	5159	20160107055117.376	20160107055118.673
PX2 (135)	5159	5162	20160107055118.673	20160107055119.322
PX2 (135)	5162	5168	20160107055119.322	20160107055122.130
PX2 (135)	5168	5172	20160107055122.130	20160107055122.997
PX2 (135)	5173	5177	20160107055123.212	20160107055124.079
PX2 (135)	5177	5185	20160107055124.079	20160107055125.806
PX2 (135)	5185	5187	20160107055125.806	20160107055126.240
PX2 (135)	5188	5190	20160107055126.454	20160107055126.888

Continued on next page

Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX2 (135)	5190	5192	20160107055126.888	20160107055127.322
PX2 (135)	5192	5194	20160107055127.322	20160107055127.751
PX2 (135)	5195	5205	20160107055127.970	20160107055131.646
PX2 (135)	5205	5207	20160107055131.646	20160107055132.075
PX2 (135)	5207	5214	20160107055132.075	20160107055133.591
PX2 (135)	5214	5227	20160107055133.591	20160107055137.915
PX2 (135)	3217	3226	20160107114646.209	20160107114649.670
PX2 (135)	3238	3240	20160107114652.264	20160107114652.698
PX2 (135)	3240	3242	20160107114652.698	20160107114653.127
PX2 (135)	3247	3256	20160107114654.209	20160107114657.670
PX2 (135)	3257	3260	20160107114657.885	20160107114658.533
PX2 (135)	3260	3267	20160107114658.533	20160107114700.049
PX2 (135)	3267	3270	20160107114700.049	20160107114700.698
PX2 (135)	3274	3278	20160107114701.561	20160107114702.428
PX2 (135)	3278	3280	20160107114702.428	20160107114702.858
PX2 (135)	3281	3284	20160107114703.076	20160107114703.725
PX2 (135)	3284	3287	20160107114703.725	20160107114705.885
PX2 (135)	3288	3293	20160107114706.100	20160107114707.182
PX2 (135)	3293	3296	20160107114707.182	20160107114707.830
PX2 (135)	3296	3302	20160107114707.830	20160107114709.127
PX2 (135)	3302	3305	20160107114709.127	20160107114709.780
PX2 (135)	3305	3311	20160107114709.780	20160107114711.076
PX2 (135)	3312	3315	20160107114711.291	20160107114711.940
PX2 (135)	3315	3318	20160107114711.940	20160107114714.104
PX2 (135)	3332	3334	20160107114717.127	20160107114717.561
PX3 (140)	5105	5113	20160107055103.970	20160107055107.212
PX3 (140)	5113	5115	20160107055107.212	20160107055107.646
PX3 (140)	5117	5119	20160107055108.079	20160107055108.513
PX3 (140)	5120	5123	20160107055108.728	20160107055109.376
PX3 (140)	5126	5129	20160107055110.025	20160107055110.673
PX3 (140)	5130	5132	20160107055110.888	20160107055111.322
PX3 (140)	5133	5139	20160107055111.536	20160107055114.349
PX3 (140)	5139	5141	20160107055114.349	20160107055114.779
PX3 (140)	5141	5143	20160107055114.779	20160107055115.212
PX3 (140)	5143	5150	20160107055115.212	20160107055116.728
PX3 (140)	5150	5153	20160107055116.728	20160107055117.376
PX3 (140)	5153	5156	20160107055117.376	20160107055118.025
PX3 (140)	5156	5159	20160107055118.025	20160107055118.673
PX3 (140)	5159	5161	20160107055118.673	20160107055119.103
PX3 (140)	5162	5168	20160107055119.322	20160107055122.130
PX3 (140)	5170	5172	20160107055122.564	20160107055122.997
PX3 (140)	5172	5177	20160107055122.997	20160107055124.079
PX3 (140)	5177	5185	20160107055124.079	20160107055125.806
PX3 (140)	5187	5190	20160107055126.240	20160107055126.888
PX3 (140)	5191	5200	20160107055127.107	20160107055130.564
PX3 (140)	5200	5205	20160107055130.564	20160107055131.646
PX3 (140)	5205	5214	20160107055131.646	20160107055133.591
PX3 (140)	5214	5227	20160107055133.591	20160107055137.915
PX3 (140)	3216	3226	20160107114645.994	20160107114649.670
PX3 (140)	3238	3240	20160107114652.264	20160107114652.698
PX3 (140)	3240	3242	20160107114652.698	20160107114653.127
PX3 (140)	3243	3245	20160107114653.346	20160107114653.780
PX3 (140)	3247	3251	20160107114654.209	20160107114655.076

Continued on next page

Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX3 (140)	3251	3256	20160107114655.076	20160107114657.670
PX3 (140)	3257	3260	20160107114657.885	20160107114658.533
PX3 (140)	3262	3270	20160107114658.967	20160107114700.698
PX3 (140)	3271	3274	20160107114700.912	20160107114701.561
PX3 (140)	3274	3277	20160107114701.561	20160107114702.209
PX3 (140)	3281	3286	20160107114703.076	20160107114705.670
PX3 (140)	3288	3290	20160107114706.100	20160107114706.533
PX3 (140)	3290	3292	20160107114706.533	20160107114706.967
PX3 (140)	3293	3296	20160107114707.182	20160107114707.830
PX3 (140)	3296	3302	20160107114707.830	20160107114709.127
PX3 (140)	3302	3305	20160107114709.127	20160107114709.780
PX3 (140)	3305	3307	20160107114709.780	20160107114710.209
PX3 (140)	3308	3311	20160107114710.424	20160107114711.076
PX3 (140)	3312	3315	20160107114711.291	20160107114711.940
PX3 (140)	3315	3317	20160107114711.940	20160107114713.885
PX3 (140)	3319	3321	20160107114714.319	20160107114714.748
PX3 (140)	3332	3334	20160107114717.127	20160107114717.561
PX3 (140)	3336	3338	20160107114717.994	20160107114718.428
PX4 (145)	5105	5115	20160107055103.970	20160107055107.646
PX4 (145)	5115	5117	20160107055107.646	20160107055108.079
PX4 (145)	5117	5119	20160107055108.079	20160107055108.513
PX4 (145)	5121	5124	20160107055108.943	20160107055109.591
PX4 (145)	5126	5129	20160107055110.025	20160107055110.673
PX4 (145)	5130	5133	20160107055110.888	20160107055111.536
PX4 (145)	5133	5137	20160107055111.536	20160107055113.915
PX4 (145)	5137	5139	20160107055113.915	20160107055114.349
PX4 (145)	5141	5143	20160107055114.779	20160107055115.212
PX4 (145)	5143	5146	20160107055115.212	20160107055115.861
PX4 (145)	5147	5150	20160107055116.079	20160107055116.728
PX4 (145)	5150	5156	20160107055116.728	20160107055118.025
PX4 (145)	5156	5164	20160107055118.025	20160107055119.755
PX4 (145)	5165	5168	20160107055119.970	20160107055122.130
PX4 (145)	5168	5171	20160107055122.130	20160107055122.783
PX4 (145)	5172	5175	20160107055122.997	20160107055123.646
PX4 (145)	5177	5179	20160107055124.079	20160107055124.513
PX4 (145)	5179	5187	20160107055124.513	20160107055126.240
PX4 (145)	5187	5190	20160107055126.240	20160107055126.888
PX4 (145)	5191	5200	20160107055127.107	20160107055130.564
PX4 (145)	5202	5205	20160107055130.997	20160107055131.646
PX4 (145)	5205	5208	20160107055131.646	20160107055132.294
PX4 (145)	5208	5214	20160107055132.294	20160107055133.591
PX4 (145)	5214	5216	20160107055133.591	20160107055134.025
PX4 (145)	5217	5220	20160107055134.240	20160107055134.888
PX4 (145)	5220	5223	20160107055134.888	20160107055135.536
PX4 (145)	5223	5225	20160107055135.536	20160107055135.970
PX4 (145)	5225	5227	20160107055135.970	20160107055137.915
PX4 (145)	3216	3226	20160107114645.994	20160107114649.670
PX4 (145)	3238	3240	20160107114652.264	20160107114652.698
PX4 (145)	3240	3242	20160107114652.698	20160107114653.127
PX4 (145)	3243	3245	20160107114653.346	20160107114653.780
PX4 (145)	3246	3255	20160107114653.994	20160107114655.940
PX4 (145)	3256	3260	20160107114657.670	20160107114658.533
PX4 (145)	3261	3269	20160107114658.748	20160107114700.479

Continued on next page

Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
PX4 (145)	3270	3274	20160107114700.698	20160107114701.561
PX4 (145)	3274	3280	20160107114701.561	20160107114702.858
PX4 (145)	3280	3285	20160107114702.858	20160107114703.940
PX4 (145)	3286	3290	20160107114705.670	20160107114706.533
PX4 (145)	3290	3292	20160107114706.533	20160107114706.967
PX4 (145)	3294	3296	20160107114707.401	20160107114707.830
PX4 (145)	3296	3298	20160107114707.830	20160107114708.264
PX4 (145)	3298	3302	20160107114708.264	20160107114709.127
PX4 (145)	3302	3307	20160107114709.127	20160107114710.209
PX4 (145)	3307	3310	20160107114710.209	20160107114710.858
PX4 (145)	3313	3315	20160107114711.506	20160107114711.940
PX4 (145)	3315	3317	20160107114711.940	20160107114713.885
PX4 (145)	3319	3321	20160107114714.319	20160107114714.748
PX4 (145)	3332	3334	20160107114717.127	20160107114717.561
PX4 (145)	3336	3338	20160107114717.994	20160107114718.428
IMG (150)	6077	6091	20160107055103.970	20160107055107.646
IMG (150)	6091	6093	20160107055107.646	20160107055108.079
IMG (150)	6093	6097	20160107055108.079	20160107055108.943
IMG (150)	6097	6100	20160107055108.943	20160107055109.591
IMG (150)	6100	6102	20160107055109.591	20160107055110.025
IMG (150)	6102	6109	20160107055110.025	20160107055111.536
IMG (150)	6110	6112	20160107055111.751	20160107055112.404
IMG (150)	6113	6116	20160107055112.619	20160107055113.701
IMG (150)	6118	6120	20160107055114.134	20160107055114.564
IMG (150)	6120	6124	20160107055114.564	20160107055115.431
IMG (150)	6124	6127	20160107055115.431	20160107055116.079
IMG (150)	6127	6130	20160107055116.079	20160107055116.728
IMG (150)	6130	6135	20160107055116.728	20160107055117.806
IMG (150)	6135	6146	20160107055117.806	20160107055120.404
IMG (150)	6146	6151	20160107055120.404	20160107055121.915
IMG (150)	6151	6159	20160107055121.915	20160107055123.646
IMG (150)	6159	6180	20160107055123.646	20160107055128.404
IMG (150)	6182	6189	20160107055129.048	20160107055130.779
IMG (150)	6189	6195	20160107055130.779	20160107055132.075
IMG (150)	6196	6211	20160107055132.294	20160107055135.536
IMG (150)	6211	6213	20160107055135.536	20160107055135.970
IMG (150)	6213	6219	20160107055135.970	20160107055137.915
IMG (150)	14860	14870	20160107114645.994	20160107114648.373
IMG (150)	14885	14888	20160107114652.049	20160107114652.698
IMG (150)	14888	14890	20160107114652.698	20160107114653.127
IMG (150)	14891	14893	20160107114653.346	20160107114653.780
IMG (150)	14894	14896	20160107114653.994	20160107114654.424
IMG (150)	14897	14902	20160107114654.643	20160107114655.725
IMG (150)	14902	14915	20160107114655.725	20160107114659.182
IMG (150)	14918	14922	20160107114659.830	20160107114700.698
IMG (150)	14922	14926	20160107114700.698	20160107114701.561
IMG (150)	14927	14937	20160107114701.776	20160107114703.940
IMG (150)	14939	14942	20160107114704.588	20160107114705.670
IMG (150)	14942	14948	20160107114705.670	20160107114706.967
IMG (150)	14948	14952	20160107114706.967	20160107114707.830
IMG (150)	14952	14954	20160107114707.830	20160107114708.264
IMG (150)	14954	14966	20160107114708.264	20160107114710.858
IMG (150)	14966	14969	20160107114710.858	20160107114711.506

Continued on next page

Table 2 – continued from previous page

APID	Seq from	Seq to	Time from	Time to
IMG (150)	14969	14972	20160107114711.506	20160107114712.373
IMG (150)	14975	14977	20160107114713.237	20160107114713.885
IMG (150)	14979	14982	20160107114714.319	20160107114714.967
IMG (150)	14982	14984	20160107114714.967	20160107114715.401
IMG (150)	14984	14986	20160107114715.401	20160107114715.830
IMG (150)	14986	14988	20160107114715.830	20160107114716.264
IMG (150)	14996	14998	20160107114717.994	20160107114718.428
IMG (150)	15005	15010	20160107114719.940	20160107114721.670
VER (160)	9590	9593	20160107055103.970	20160107055103.970
VER (160)	9593	9597	20160107055103.970	20160107055111.970
VER (160)	9598	9603	20160107055111.970	20160107055119.970
VER (160)	9603	9608	20160107055119.970	20160107055127.970
VER (160)	9608	9614	20160107055127.970	20160107055143.970
VER (160)	6544	6547	20160107114639.940	20160107114646.209
VER (160)	6549	6559	20160107114646.209	20160107114703.940
VER (160)	6559	6562	20160107114703.940	20160107114711.940
VER (160)	6562	6564	20160107114711.940	20160107114711.940
AUX (180)	8438	8440	20160107055128.404	20160107055144.404
AUX (180)	11103	11105	20160107114648.373	20160107114704.373

Table 2: L0 data gaps

3 Instrument modes

Time	Transition from	Transition to
07/01/2016 00:00:15	-	Normal operation

Table 3: Instrument modes

4 L0 and L1 Data Quality

Flag	Value	Action
L0 IASI PDUs	481	-
L1 ENG PDUs	480	-
L1 ENG distinct GEPSGranule	481	-
GQisFlagQual set (PX1)	99.49 %	-
GQisFlagQual set (PX2)	99.47 %	-
GQisFlagQual set (PX3)	99.46 %	-
GQisFlagQual set (PX4)	99.50 %	-
GQisFlagQual set (all)	99.48 %	-

Table 4: Quality flags

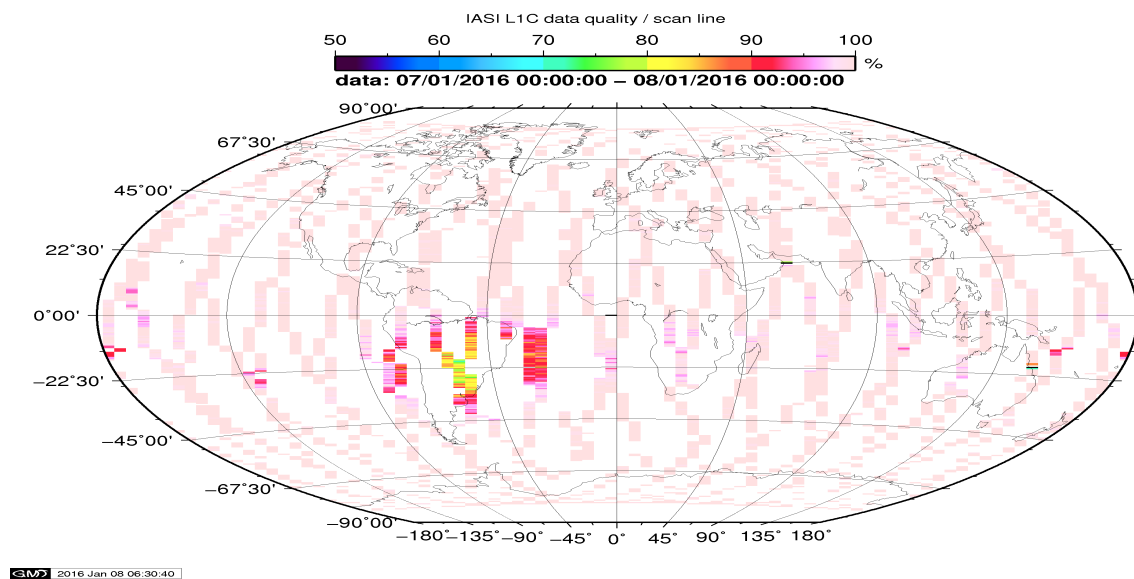


Figure 1: L1C data quality

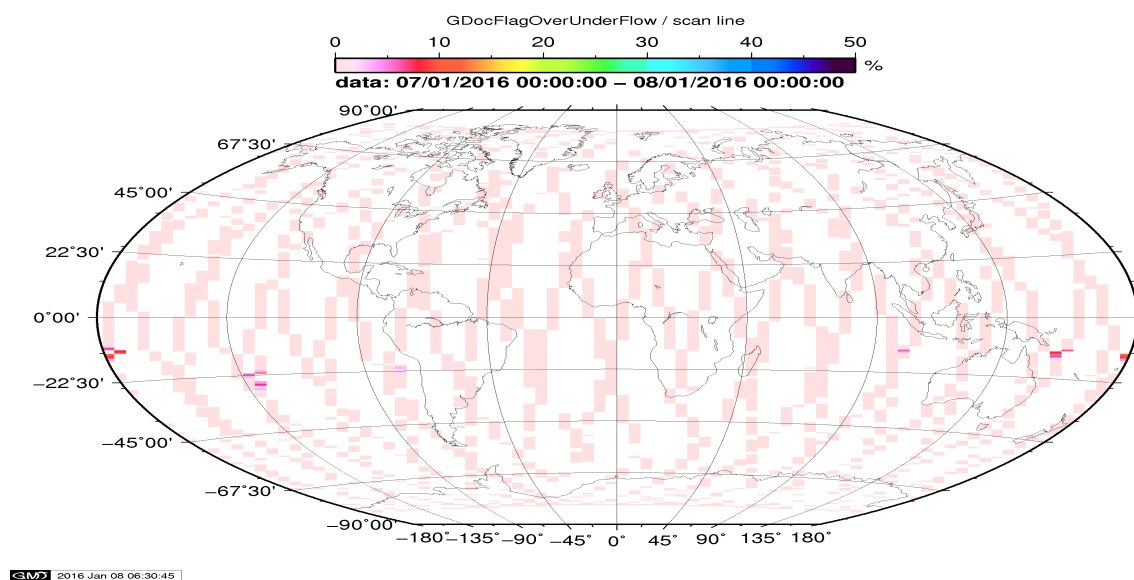


Figure 2: Flag of Over and Under Flows

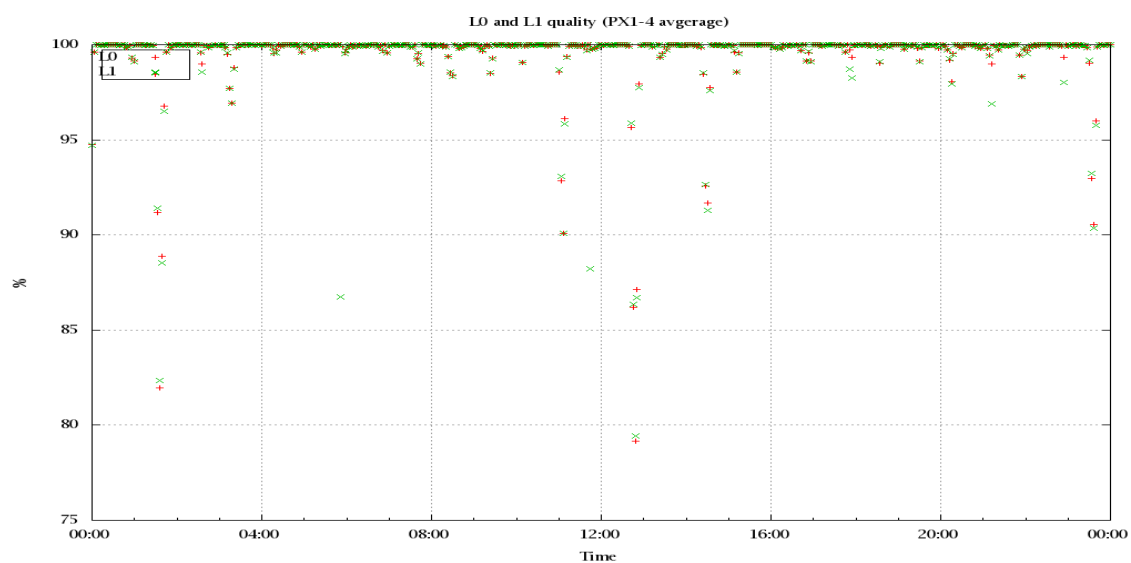


Figure 3: Level 0 and 1C overall quality

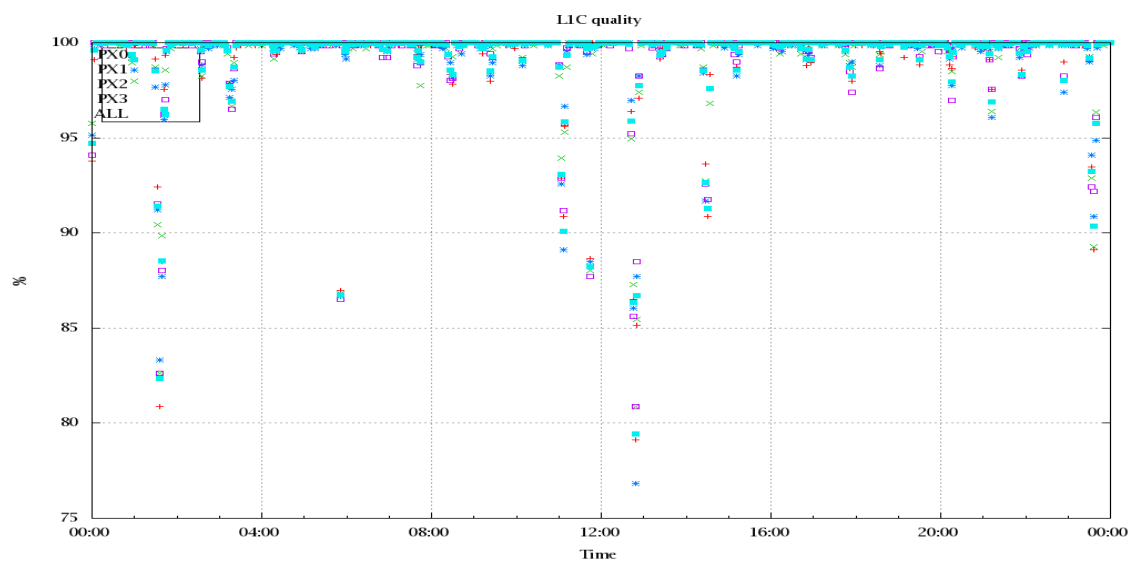


Figure 4: Level 1C quality

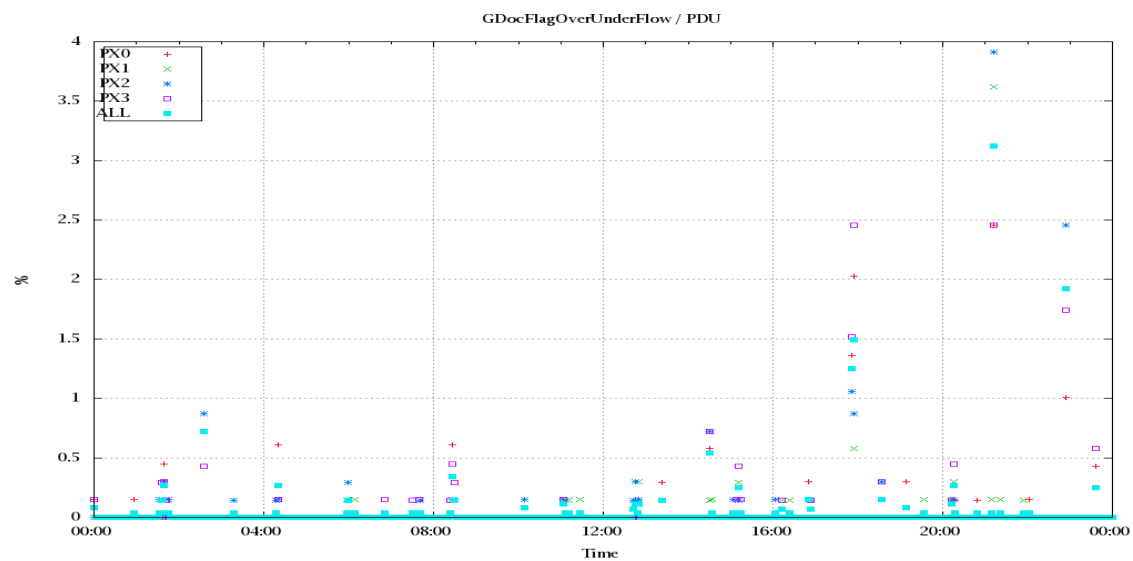


Figure 5: OverUnderFlowFlag timeseries

5 Radiance monitoring based on NWP

The radiance monitoring compares the IASI measurements (L1C-eps-products) obtained under clear sky situation over sea with modeled radiances. Cloud identification is based on cloud flag of co-located AVHRR L1B data in addition to information from the IASI L1C clustering analysis here only homogenous situations are taken into account (99.0 percent in first class). A radiative transfer model (RTM) is feed with co-located ECMWF profiles of T,WV, and Ozon. Between March 2007 and the 18th of May 2010 RTIASI in Version 4.0 is used. After that date the RTTOV model in V9.3 is used. Information about the SST is obtained from the AVHRR L1B or taken from AVHRR scenes analysis (CGS only). In the following figures 10 to 16 the so-called radiance anomaly is shown. The radiance anomaly is defined as the difference between the quarter daily radiance average OBS-CAL (over all pixel and scan position 10 to 20) and the average bias OBS-CAL (over all pixel and scan position 10 to 20) of the last 30 days.

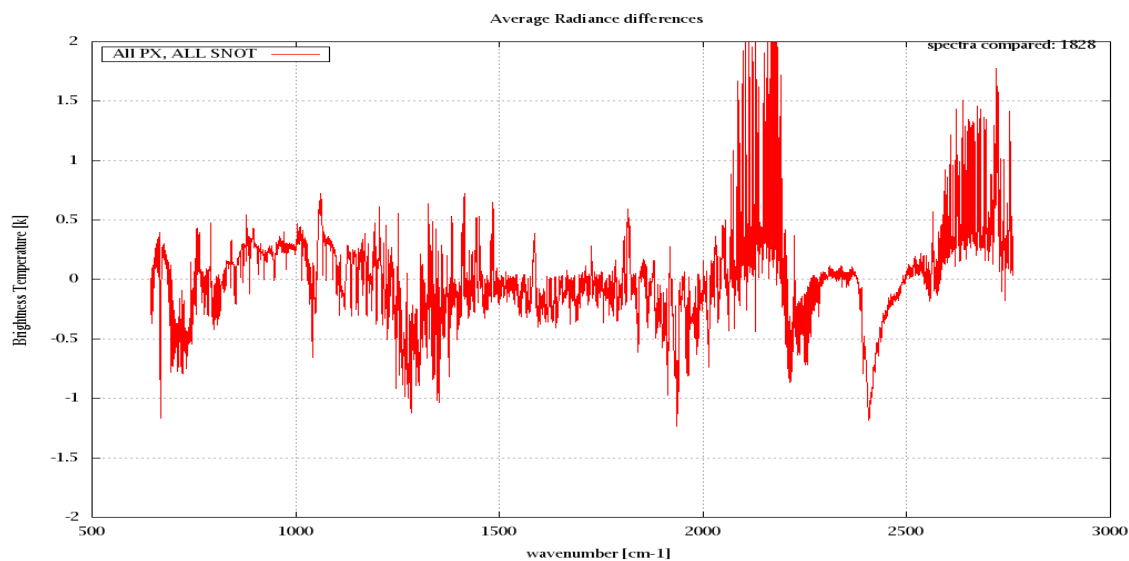


Figure 6: Average Radiance differences: OBS-CAL

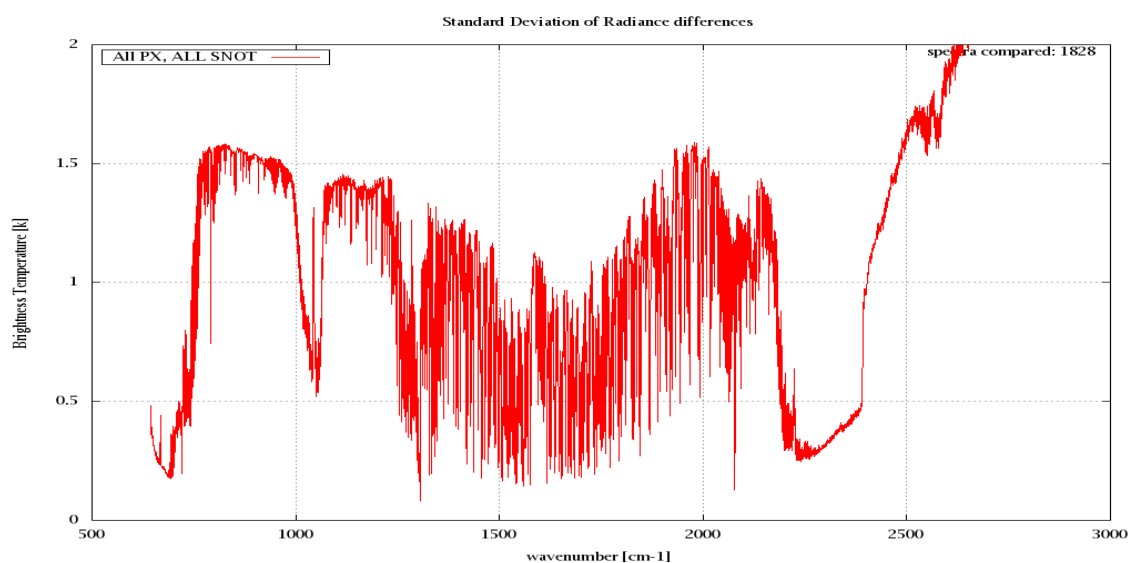


Figure 7: Standard Deviation of Radiance differences

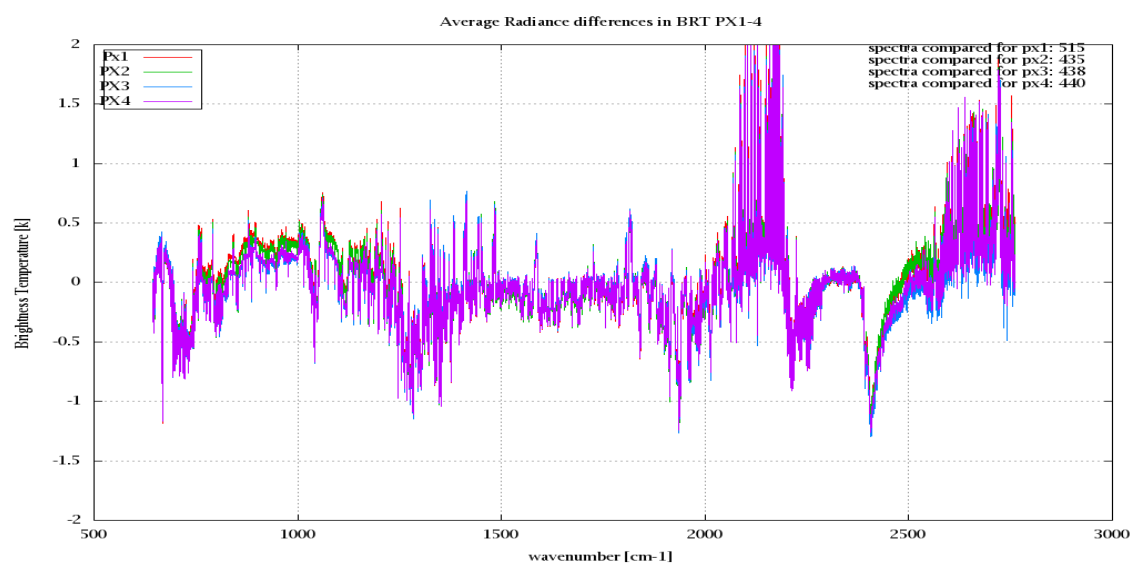


Figure 8: Average Radiance differences: OBS-CAL

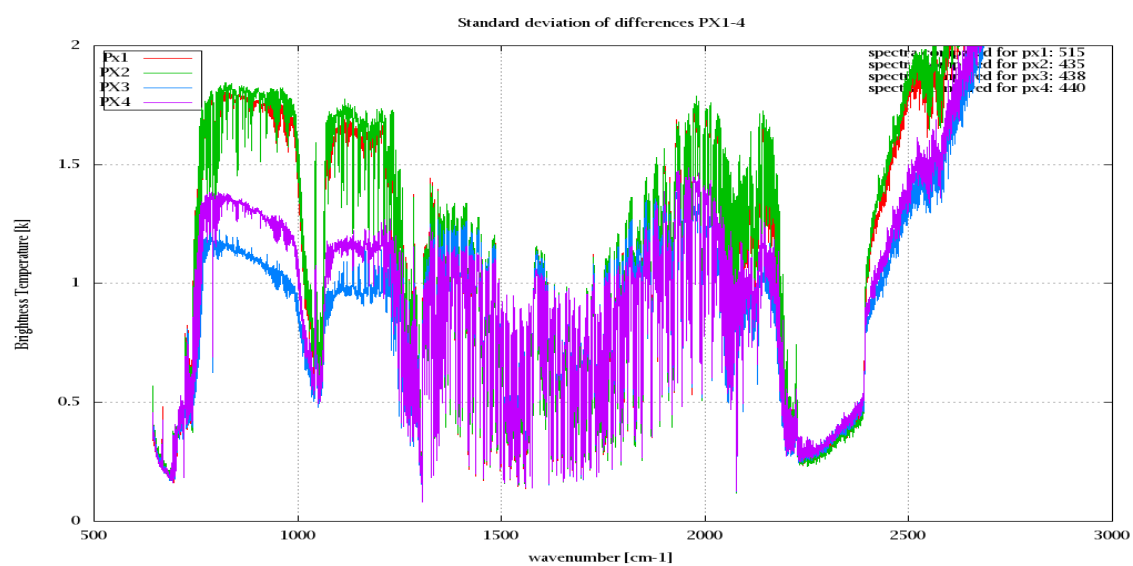


Figure 9: Standard Deviation of Radiance differences

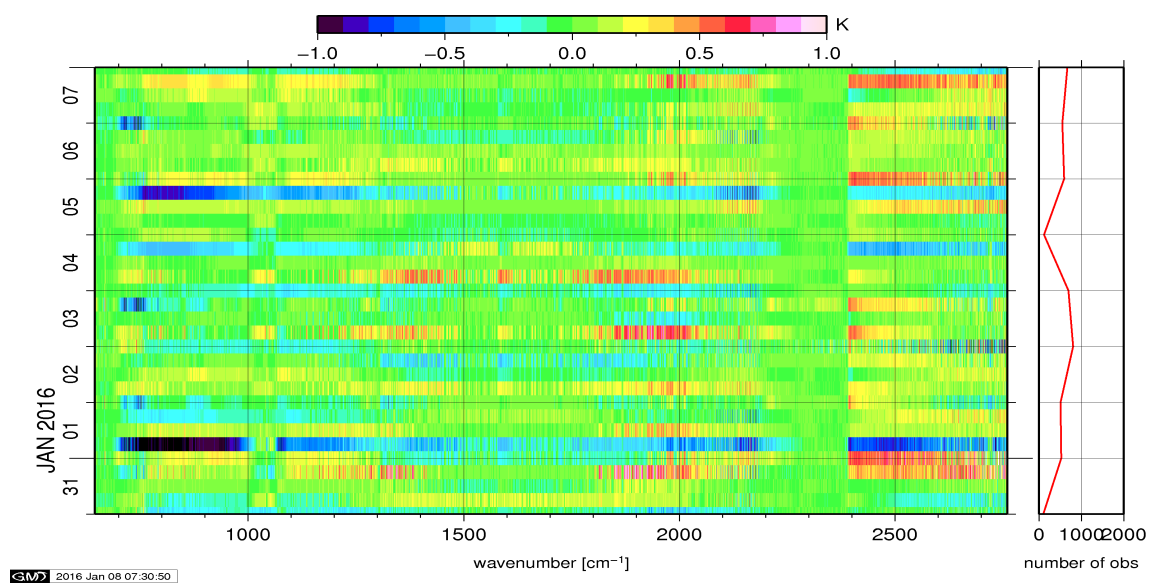


Figure 10: Radiance Anomaly in BRT: All Channels

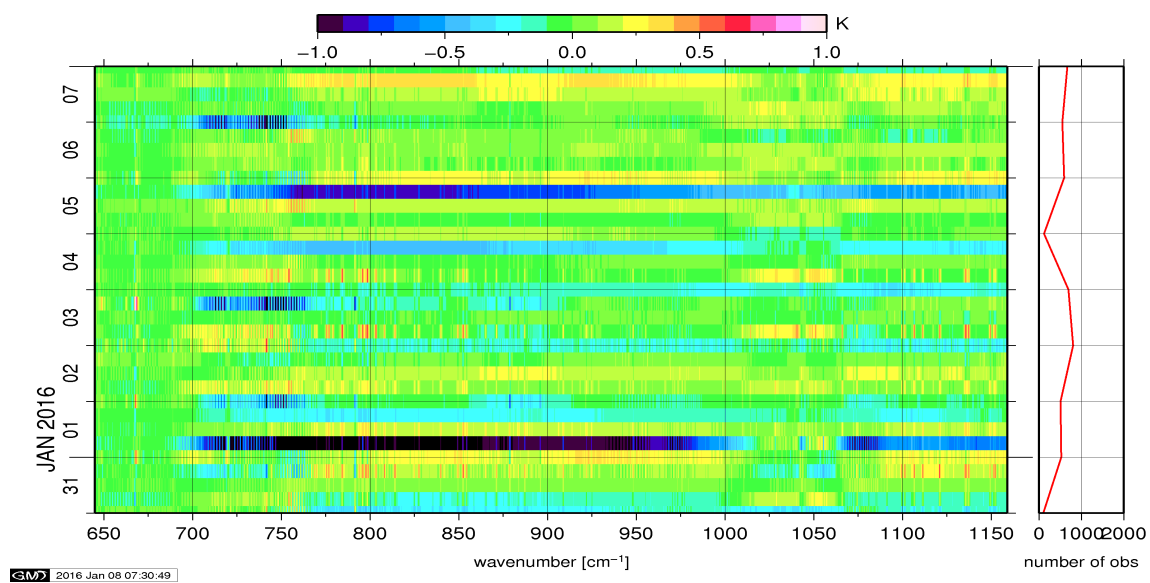


Figure 11: Radiance Anomaly in BRT: IASI Band 1

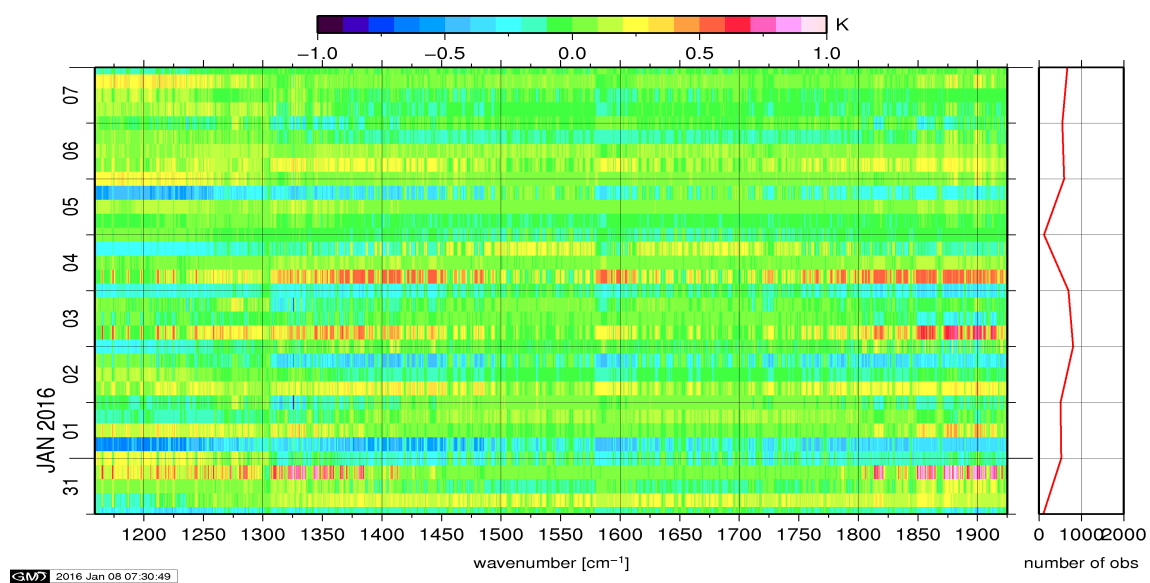


Figure 12: Radiance Anomaly in BRT: IASI Band 2

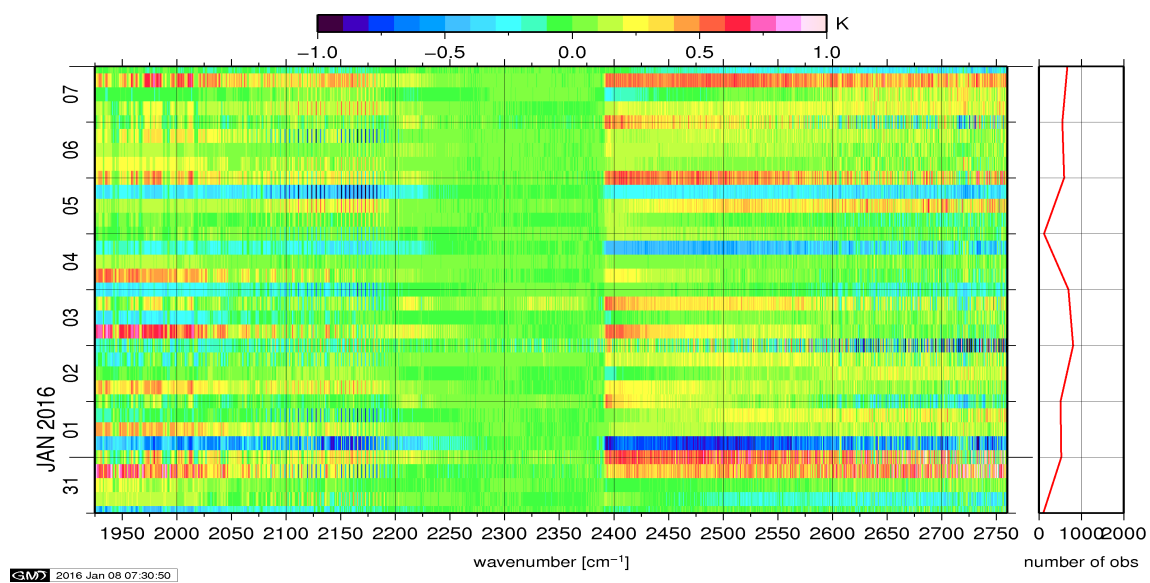


Figure 13: Radiance Anomaly in BRT: IASI Band 3

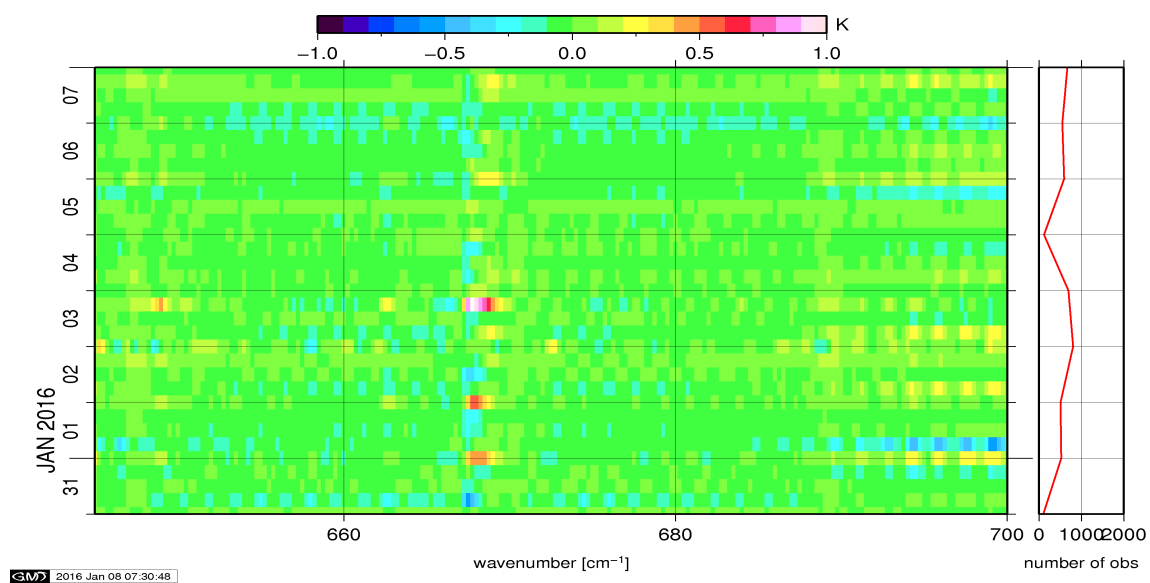


Figure 14: Radiance Anomaly in BRT: CO2 14

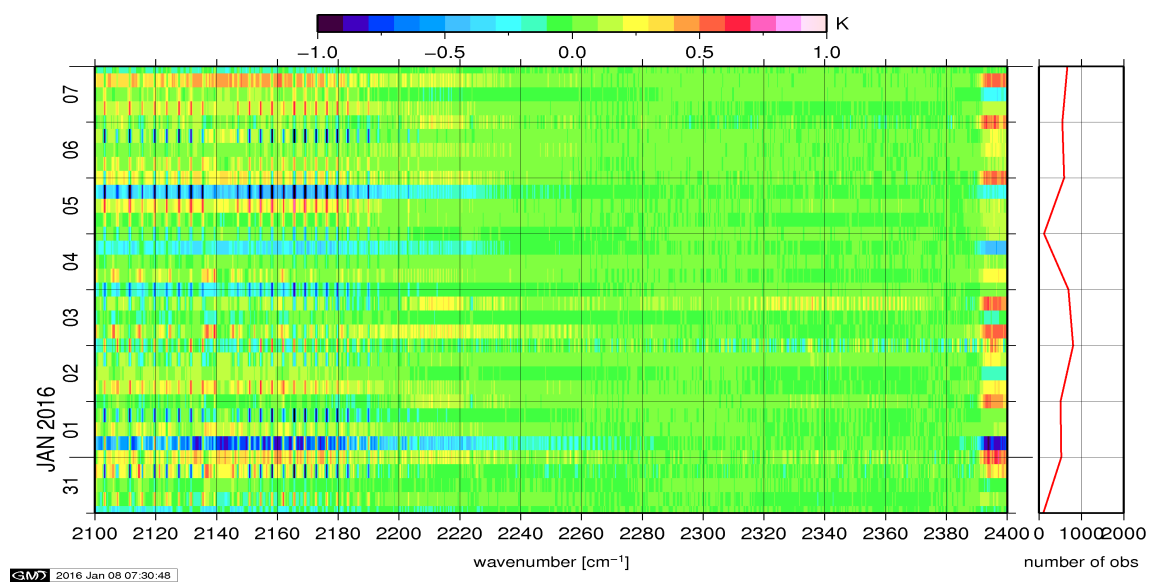


Figure 15: Radiance Anomaly in BRT: CO2 4.3

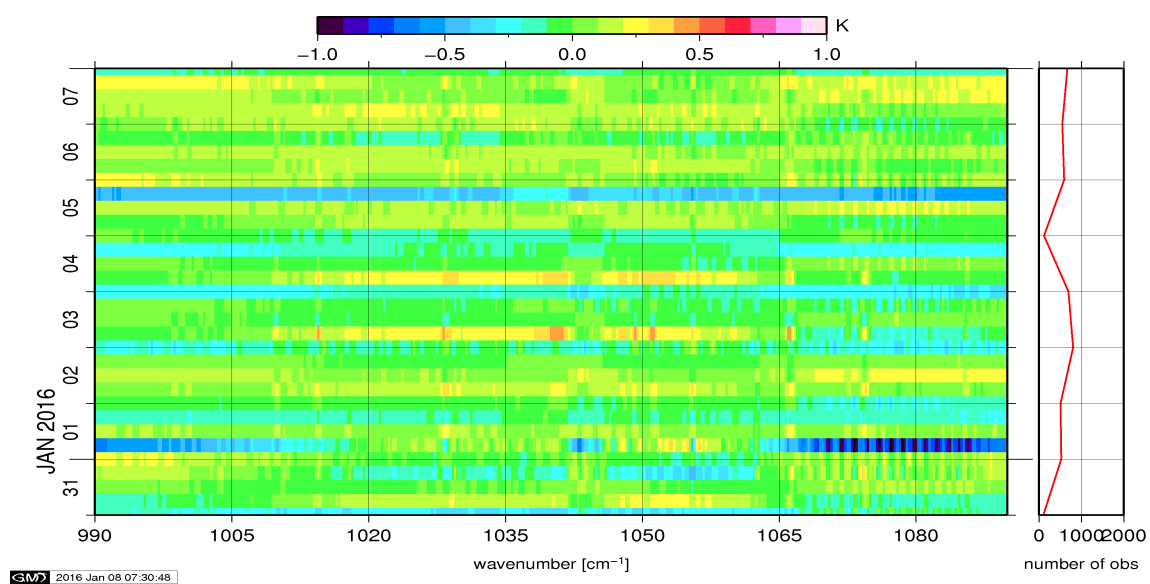


Figure 16: Radiance Anomaly in BRT: O3

6 IASI-HIRS radiance comparison Channel 1-19

The radiance comparison of IASI and HIRS/4 on-board MetOp is performed on all pixel with distances smaller than 3 km between IASI and HIRS. All sky conditions are covered. The radiance differences IASI - HIRS are given in brightness temperatures at 280K reference temperature. All conditions (clear, cloudy, day and night) are given in red in the following figures. The clear sky conditions at night are given in green and the clear sky cases during daylight are displayed in blue.

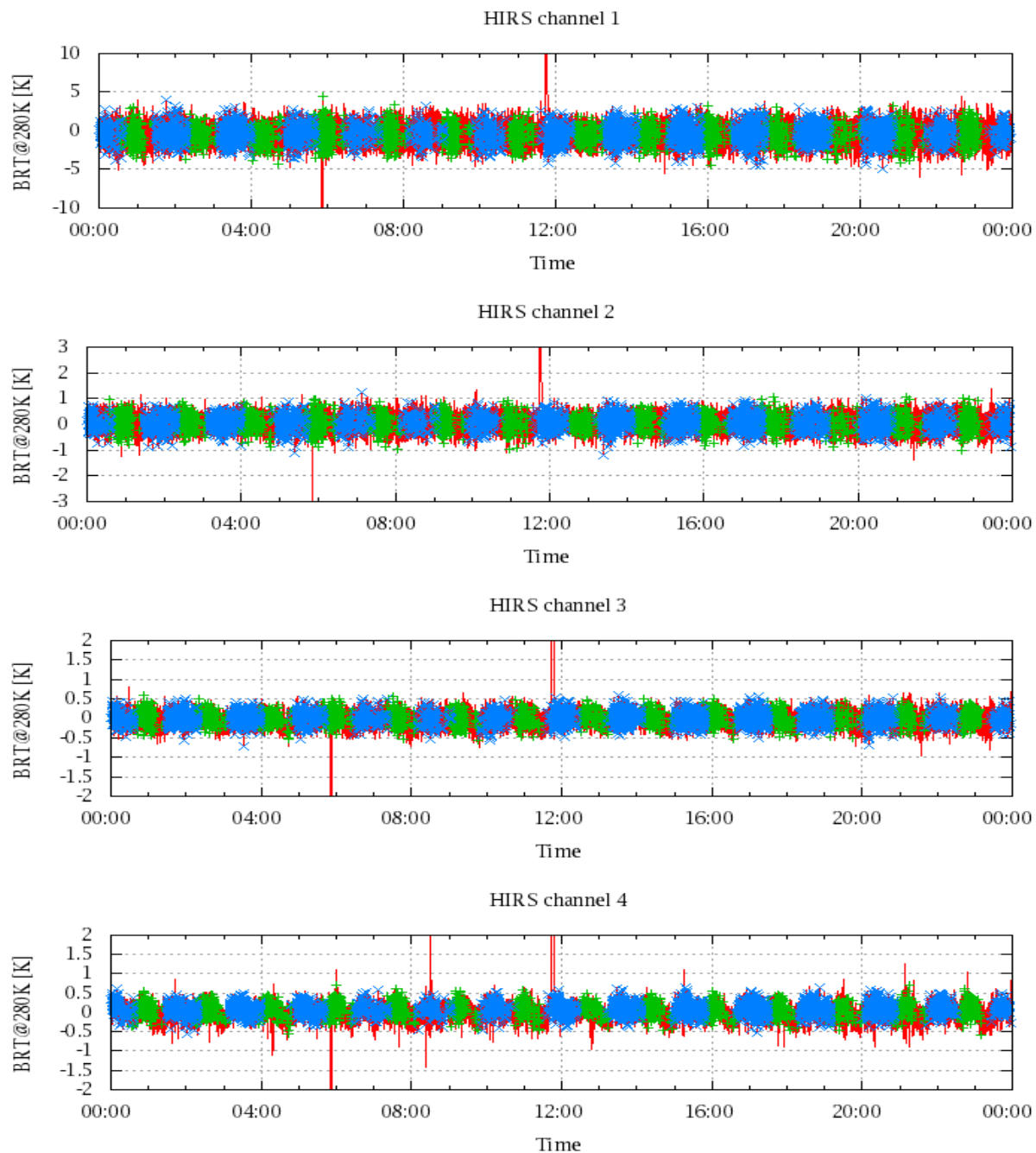


Figure 17: Radiance Differences in BRT

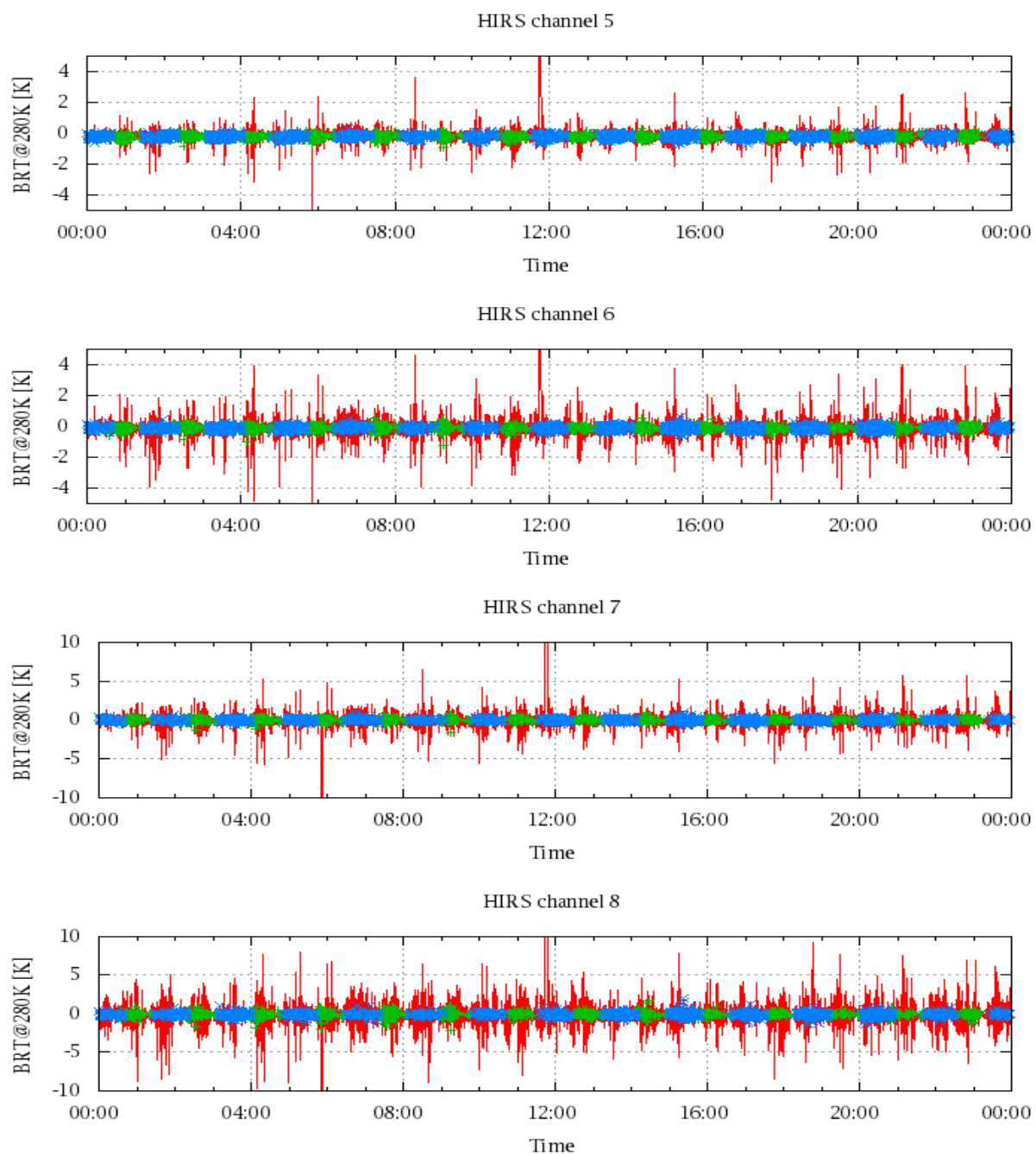


Figure 18: Radiance Differences in BRT

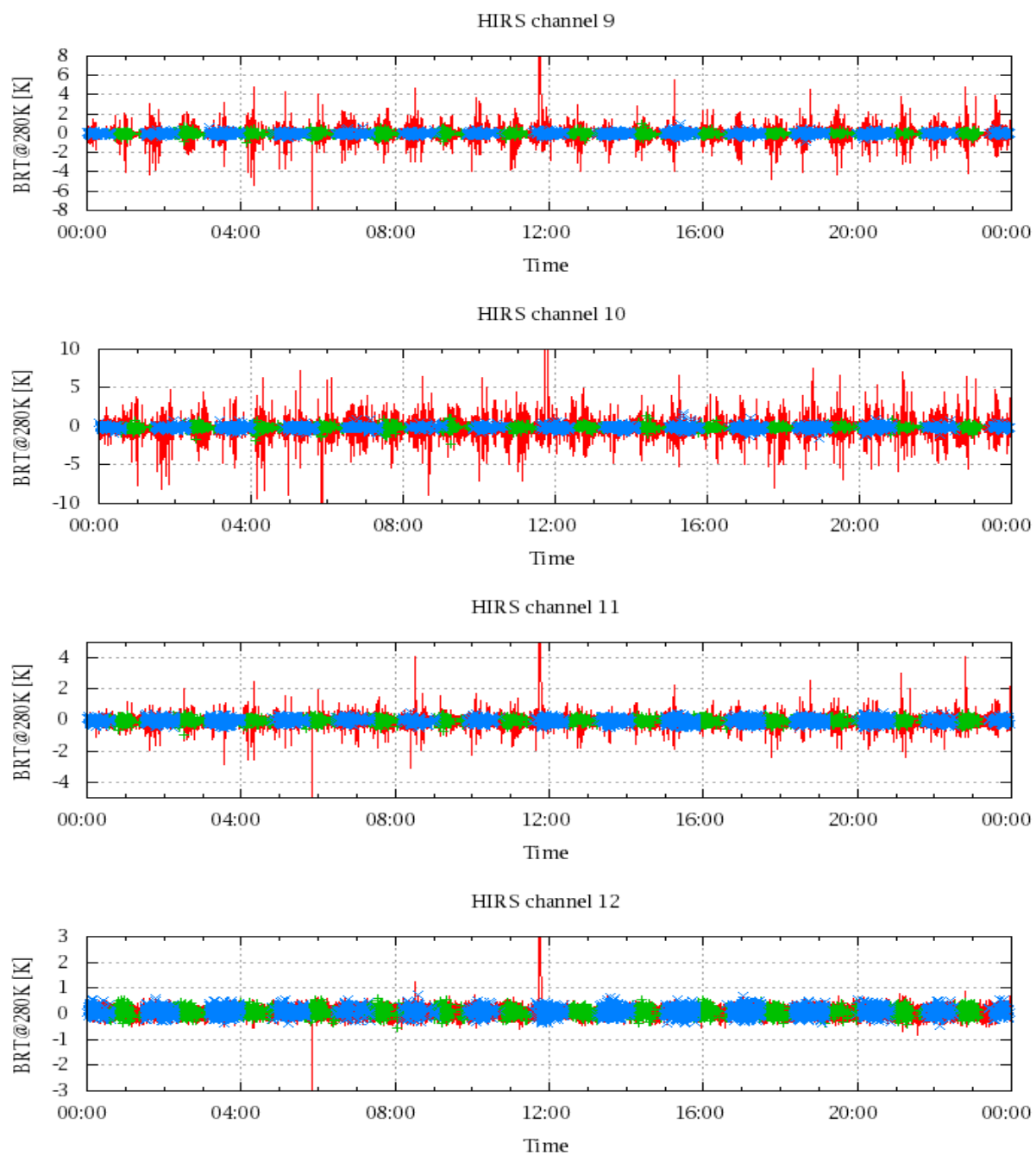


Figure 19: Radiance Differences in BRT

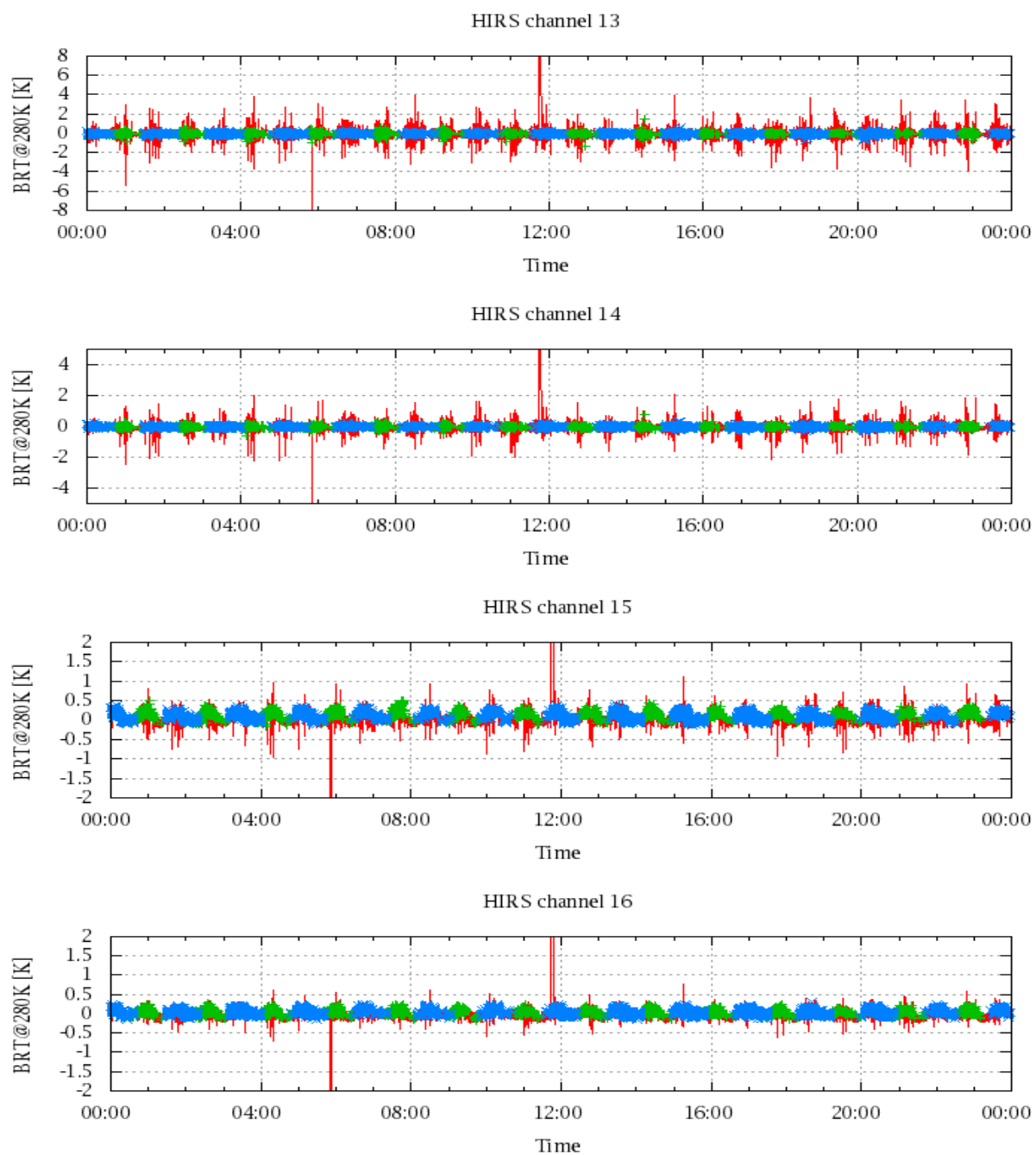


Figure 20: Radiance Differences in BRT

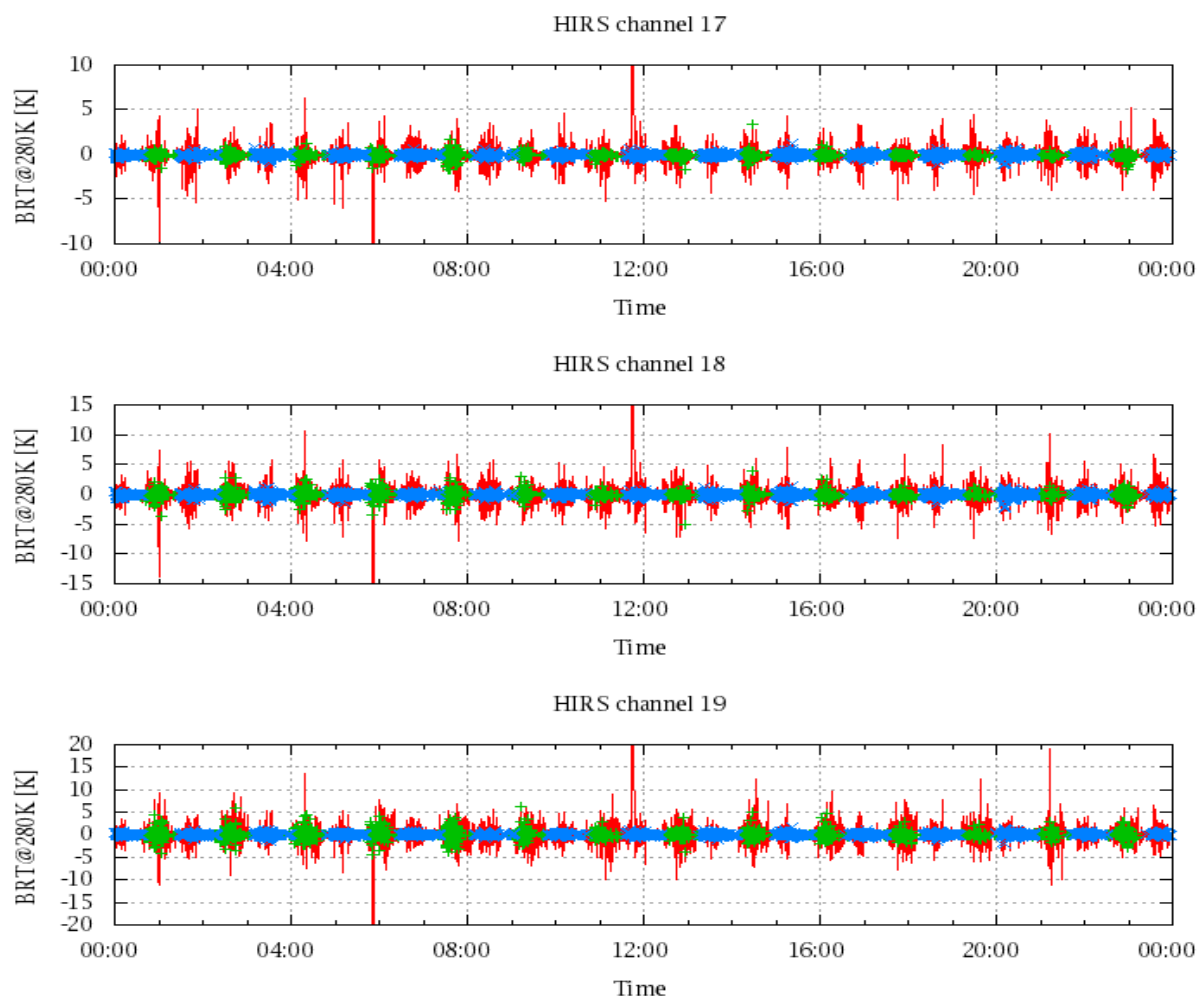


Figure 21: Radinace Differences in BRT